

Chapter 5 Information Gaps

5.1 Purpose and Need for Water Quality Planning Data

The Statewide Water Quality Management Plan (SWQMP) provides a framework for managing water quality information that can be used throughout the state to ensure surface and groundwater quality standards are being attained and designated uses are being protected. The information provided in this first SWQMP is foundational and will be revised and refined through future updates. Various types of data and information are needed to support water quality planning efforts, regardless of whether such planning efforts are performed at the statewide, basin, or watershed level. Inevitably, information gaps occur when planning is conducted. Due to the short timeline for developing the first edition of the SWQMP, a decision was made to base the document on readily-available, peer- and quality-reviewed data found in the 2010 *Integrated Water Quality Monitoring and Assessment Report* (2010 Integrated Report) developed by the Water Quality Control Division (WQCD) and approved by the Water Quality Control Commission (WQCC) (WQCC 2010 and WQCD 2010). The use of the 2010 Integrated Report is also consistent with the requirements of 40 CFR 130.6.¹ Since there are inherent information gaps in the data sources and processes followed to develop the report, these carry over to the SWQMP.

The Division recognizes that there are many data collection efforts occurring at the local, regional, and watershed levels across the state and that some of the data from these efforts may be applicable for inclusion into future versions of the SWQMP. Interested parties are encouraged to submit data they wish to be considered during the WQCD's "call for data" that occurs as part of the biennial Integrated Report development process.

The purpose of this chapter is to outline some of the information gaps identified when developing the first edition of the SWQMP, primarily those encountered in the development of the basin plans. Addressing these information gaps provide opportunities for improving the SWQMP's foundational information over time. Future periodic updates will consider the following information gaps and evaluate them for applicability.

5.2 Identified Information Gaps

Below is a list of some of the more significant information gaps identified in the development of the SWQMP. The list includes gaps at the basin and sub-basin levels that impact the statewide consolidation and integration of basin-level information.

- ◆ There is a lack of statewide planning data layers depicting waterbody segments and their respective boundaries nested within basins and sub-basins. Segments are essentially line

¹ Colorado's SWQMP is being developed as a Water Quality Management Plan as defined in the federal water quality planning regulations at 40 CFR Part 130.6. Per 40 CFR 130.6 requirements, the SWQMP must "be based upon water quality management plans and water quality problems identified in the latest 305(b) report."

data, whereas hydrologic unit codes (HUCs) are polygons for the purposes of mapping watersheds. Line data are limited.

- ◆ Different basins or boundaries are used or specified by the array of governmental agencies and other entities working on water resource issues in the state, making it difficult to assimilate and make use of available data.
- ◆ The extent of the universe of lakes and reservoirs is not fully documented in a manner that lends itself to full integration into the water quality assessment process.
- ◆ The extent of the universe of wetlands is not fully documented.
- ◆ Geographic reference points are lacking for several data elements that limit abilities to display and analyze information in a geographic information system (GIS) format. Examples include the following:
 - ❖ Missing latitude/longitude locational data for the monitoring stations at which 2010 Integrated Report data were derived, especially those stations external to the Division
 - ❖ No comprehensive single source of latitude/longitude locational data for publicly owned treatment works
 - ❖ No comprehensive source of latitude/longitude locational data for nonpoint source projects or locations where mitigation strategies have been undertaken
 - ❖ Limited dataset on the universe of lakes, reservoirs, and wetlands. For those in the dataset, reference information is lacking, thereby hindering mapping abilities.
- ◆ There is a lack of information and/or a database that allows permitted dischargers to be displayed by permit type within each river basin or sub-basin. This information would allow a clearer presentation of the types of dischargers within each basin and sub-basin.
- ◆ Monitoring locations that are proximate to point sources are limited making it difficult to characterize point source impacts.
- ◆ Bioassessment and toxicity information for the state's waterbodies is more limited than other forms of data (chemical and physical). Full integration of the biological data with the chemical and physical data will improve water quality status assessments.
- ◆ The limited availability of long-term, systematically collected trend monitoring data hampers abilities to protect Colorado's watersheds (i.e., to preclude potential problems). Attempts were made to link stream flow and water quality monitoring data where monitoring sites could be paired and where data had been collected over a number of years for select parameters. The water quality data is generally too limited to make these analyses possible. While it is recognized that the WQCD maintains a limited set of monitoring stations that are sampled annually, the current sampling plans for these

stations would need to be re-assessed to address incorporating trend analysis as a sampling objective.

- ◆ There are minimal mechanisms available to easily identify potential parameters of concern. For example, water quality standards are occasionally exceeded or potentially exceeded in site-specific locations (i.e., portions of segments represented by a single monitoring station) even when the stream segment as a whole is not impaired. In some cases, the available data might not meet one or more of the applicable credible evidence requirements for inclusion on its list of impaired waters or on the monitoring and evaluation list. In other instances, additional assessment beyond the magnitude of the instream concentration of a parameter is needed to make an attainment determination. It would be helpful from a water quality planning and management perspective to track these *potential* water quality concerns. Such activities would better enable proactive, rather than reactive, approaches to water quality planning and management.
- ◆ Capacity is limited to efficiently obtain, review, and extract information on water quality stressors, sources of stressors, and mitigation strategies from studies and projects performed by other governmental agencies, private conservation organizations, and watershed groups. This information would make the SWQMP more comprehensive.
- ◆ Capacity is limited to efficiently obtain, review, and extract information on the current status of projects and best management practices being implemented as a component of approved total maximum daily loads (TMDLs) and Clean Water Act (CWA) section 319 grants, State Revolving Funds, and other funding sources. Acquisition and compilation of this information would enable a more holistic view of the water quality-related activities occurring on a sub-basin or watershed level. Specific information of interest could include:
 - ❖ Comprehensive listing, status, and expenditures of capital improvement projects, monitoring, assessment, and other activities ongoing and/or completed
 - ❖ Identification, description, and mapping of water quality-related projects funded by sources other than federal and state dollars
 - ❖ Maps depicting stream segments with completed TMDLs and/or ongoing or proposed monitoring and evaluation activities
 - ❖ Cumulative dollars spent within basins and sub-basins to demonstrate state and local commitment to addressing known problems.
- ◆ Capacity is limited to efficiently obtain, review, and extract water planning information from regional and local governments and others.
- ◆ Capacity is limited to efficiently obtain, review, and extract data from other federal agencies like the Natural Resources Conservation Service (NRCS). Specific data and information of interest include:

- ❖ Watershed scale general soil maps that could help to identify the link between soils, potential water quality impacts, and potential best management practices to address water quality impacts
- ❖ NRCS and partner water supply snow sampling sites and water supply forecasting basins
- ❖ Data, maps, and project descriptions regarding ongoing and/or completed Colorado River Salinity Control projects in select river basins

NRCS also maintains data and information regarding mitigation and restoration work occurring in watersheds throughout the state. These projects are frequently funded by sources other than the CWA section 319 grant program and are therefore not necessarily reflected in the Division's datasets.

5.3 Closing Information Gaps in Future SWQMP Updates

As noted previously, this first edition of the SWQMP is intended to be a foundational planning document that contains a consistent level of information. Ideally, some of the information gaps discussed in this chapter will be addressed prior to the development of future SWQMP editions.

References

- WQCC (Water Quality Control Commission). 2010. Regulation No. 93: *Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List*. 5 CCR 1002-93. Colorado Department of Public Health and Environment, Water Quality Control Division, Denver, CO.
- WQCD (Water Quality Control Division). 2010. *Integrated Water Quality Monitoring and Assessment Report*. Colorado Department of Public Health and Environment, Water Quality Control Division, Denver, Colorado.

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